Three New Species of *Pseudobombax* (Malvaceae, Bombacoideae) from Brazil

Jefferson Guedes de Carvalho-Sobrinho

Programa de Pós-Graduação em Botânica, Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, Km 03, BR 116, Campus Universitário, 44031-460, Feira de Santana, Bahia, Brazil. jef.sobrinho@gmail.com

Luciano Paganucci de Queiroz

Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, Km 03, BR 116, Campus Universitário, 44031-460, Feira de Santana, Bahia, Brazil

Abstract. Three new species of *Pseudobombax* Dugand (Malvaceae, Bombacoideae) are described and illustrated based on material from Brazil. *Pseudobombax minimum* Carv.-Sobr. & L. P. Queiroz is not clearly related to any species of *Pseudobombax* from central-eastern Brazil. However, *P. minimum* may be promptly recognized by its extremely reduced flowers (to 6 cm long) and fruits (to 5.5 cm long), the smallest recorded for *Pseudobombax* to date, in combination with the glabrous androecium and the presence of phalanges. The other two new species, *P. calcicola* Carv.-Sobr. & L. P. Queiroz and *P. parvifolium* Carv.-Sobr. & L. P. Queiroz, seem to be related to *P. grandiflorum* (Cav.) A. Robyns based on the number of leaflets and the absence of phalanges in the androecium, but differ due to the absence of intersecondary veins, the larger ovary, and the fruits angled, but not winged.

Key words: Bombacoideae, Brazil, IUCN Red List, Malvaceae, *Pseudobombax*.

Pseudobombax Dugand is a Neotropical genus belonging to the subfamily Bombacoideae of the Malvaceae (Judd & Manchester, 1997; Baum et al., 1998, 2004; Alverson et al., 1999; Bayer et al., 1999). It encompasses ca. 27 species (Robyns, 1963, 1967; Fernández-Alonso, 1999, 2001; IPNI, 2008), of which ca. 20 occur in Brazil, distributed mainly in the central plateau and northeastern Brazil, in cerrado and caatinga vegetation (in sched. information).

The genus is characterized by mostly unarmed trunks marked with vertical, greenish stripes; leaves that are digitately compound, pulvinate, and clustered at branch tips, with the petiole widened at apex; leaflets that are not articulate at the petiole apex; a persistent calyx that is accrescent in fruit; the receptacle presenting conspicuous glands; the filaments that are partially connate in a tube and the anthers that are monothecate and hippocrepiform; and the capsules with abundant kapok.

Most species of *Pseudobombax* have deciduous foliage during the flowering period (usually the winter season in the Southern Hemisphere). A consequence of this is that herbarium collections of the species of *Pseudobombax* are largely incomplete, which raises doubt in species circumscriptions because it is difficult to match leaves, flowers, and fruit characters. Thus, one of the priorities for the taxonomic study of this genus has been to carry out intensive field studies to gather leaves, flowers, and fruits from the same specimen. This strategy was performed during a survey of this genus in the state of Bahia in eastern Brazil. As a result of these efforts, new collections were obtained resulting in the following three new species, which are described and illustrated herein.

1. Pseudobombax calcicola Carv.-Sobr. & L. P. Queiroz, sp. nov. TYPE: Brazil. Bahia: São Félix do Coribe, Serra do Ramalho, ca. 47 km ao S de São Félix do Coribe, na estrada para Alagoinhas, 13°47′22″S, 43°57′32″W, 13 Sep. 2005 (fl., fr.), *J. G. de Carvalho-Sobrinho & L. P. de Queiroz 573* (holotype, HUEFS; isotypes, K, SP). Figure 1.

Haec species foliis 5-foliolatis, petiolo apice paulo dilatato et androecio sine phalangibus *Pseudobombaci parvifolio* Carv.-Sobr. & L. P. Queiroz affinis, sed ab eo habitu candelabriformi, ramis suberosis resinosis, calyce 11–18 mm (vs. 10–11 mm) longo, fructu 1.3–1.5 cm (vs. 2.8–5) lato et seminibus pyriformibus omnino brunneis (vs. reniformibus bicoloribus variegatis) differt.

Tree ca. 4 m; habit candelabriform; trunk striped with alternating bands of grayish bark and greenish underbark; crown open, irregular; branches corky, resinous, often covered with whitish wax at the ends;

doi: 10.3417/2007054 Novon 20: 13–20. Published on 18 March 2010.

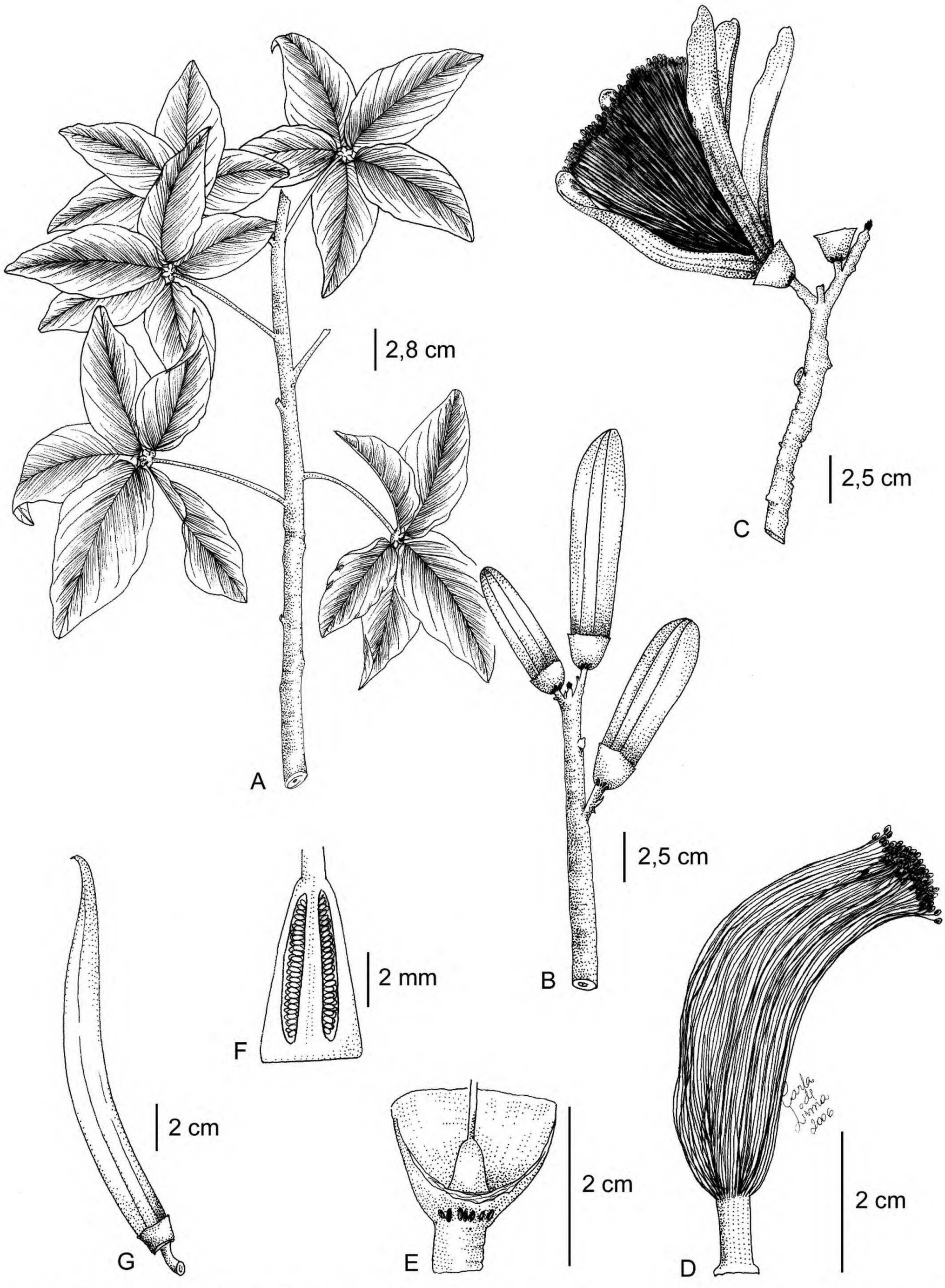

Figure 1. *Pseudobombax calcicola* Carv.-Sobr. & L. P. Queiroz. —A. Leaves. —B. Flower buds. —C. Flower. —D. Androecium. —E. Ovary. —F. Longitudinal section of the ovary. —G. Fruit. A–C drawn from *D. Andrade-Lima 75-8152* (IPA); D–G drawn from the holotype *J. G. de Carvalho-Sobrinho & L. P. de Queiroz 573* (HUEFS).

brachyblasts absent; stipules not seen. Leaves palmately compound, often clustered at the apex of the branches; petiole 45–120 mm, cylindrical, glabrous to puberulent, with whitish wax coating, base flattened, slightly thickened, glandular, glands 1 to many, apex widened ca. 3 mm diam.; petiolule up to 2 mm, furrowed, pulvinulate or not; leaflets 5, coriaceous, usually concave, appearing conduplicate, 4.5–12 ×

2.5–5.5 cm, 2.1–2.9× longer than wide, elliptic, rarely ovate, apex acute to rounded, retuse, base cuneate to attenuate or obtuse, shortly decurrent, margin revolute, inconspicuous and irregularly crenulate, glabrous on both surfaces but with sparse, peltate microtrichomes; abaxial leaflet surface covered with whitish wax coating, midrib vein prominent abaxially, puberulent to glabrescent, secondary veins in 11 to 17 pairs, impressed on both surfaces, inconspicuous distally, intersecondary veins absent, tertiary veins simple, branched or retroflexed. Inflorescence terminal, solitary or in 2-flowered cymes, buds oblong-linear, to 9.5 cm; pedicel 6–20 × 2–9 mm, puberulent, glabrescent or glabrous, glandular or not; bracteoles 3, along the pedicel, 2–4 × 4–5 mm, triangular, covered by peltate microtrichomes, shortly aristate or not, slightly concave, margin denticulate, with sparse, tufted trichomes. Flowers 9–14 cm; receptacle 5–6 mm, puberulent to glabrescent, with 1 whorl of 10 to 20 glands; calyx 11–18 × 20–22 mm, campanulate to suboblong, truncate, 5-apiculate or not, outer surface glabrous but with peltate microtrichomes, inner surface sericeous, glabrous at base; petals 9–14 × 0.9–1.9 cm, oblong to linear, apex rounded to acute, outwardly brownish green when dry, covered with tufted, rigid hairs, inner surface sericeous, longitudinal lines of simple trichomes on one half, ramified and thin on the other half, tomentose at the base; stamens ca. 300, staminal tube 10–18 × 4–6 mm, 2.5–2.8× longer than wide, glabrous or pubescent, phalanges absent, filaments free, 70–120 mm, with anthers 3–4 mm; ovary 11–14 × ca. 4 mm, conical to oblong, 5-angled, glabrous; style 80–140 mm, sparsely puberulent to glabrous, with tufted trichomes. Capsule 10.5–20.5 × 1.3–1.5 cm, oblong, 5-angled, apex acute, apiculate, valves coriaceous, but not woody, glabrous; kapok brown; seeds 3–4 × ca. 2.5 mm, pyriform, clear brown, not spotted; hilum not prominent.

Distribution, habitat, and ecology. *Pseudobombax calcicola* has a narrow geographic range, between 13°S and 14°S latitude and 43°W and 44°W longitude, and is probably endemic to calcareous outcrops in caatinga vegetation, in the São Francisco River valley in western Bahia, Brazil. The sampled population presented many clustered individuals and seems to be endangered by the forest devastation for charcoal production (Carvalho-Sobrinho, pers. obs.). Additionally, none of the known populations of this species are located in protected areas (Secretaria de Estado do Meio Ambiente dos Recursos Hídricos et al., 2006).

IUCN Red List category. *Pseudobombax calcicola* should be considered Endangered (EN B1ab [i,ii,iii,iv]) according to IUCN Red List criteria (IUCN, 2001).

Phenology. The new species was collected in flower from July to September, and in fruit in September.

Etymology. The specific epithet is from the Latin, in reference to the habitat of the species on calcareous outcrops.

Discussion. *Pseudobombax calcicola* is known from just three collections. The earliest specimen, collected by Dárdano de Andrade-Lima in 1975 in Bom Jesus da Lapa municipality, bears leaves and flowers only. Two additional collections were obtained from a population in São Félix do Coribe municipality, one bearing leaves only (in April) and another bearing flowers and fruits (in September); these collections confirm that *P. calcicola* is indeed a new species.

This species presents a very distinctive aspect, with trees ca. 4 m tall, with an opened, very reduced crown, and short, corky branches that give the trees a candelabriform aspect (illustrated by Andrade-Lima, 1977: 189). It is characterized by leaves with five leaflets, with the petiole apex only slightly swollen (only to 3 mm diam.); the leaflets are coriaceous, elliptic, appearing conduplicate (often folded in herbarium sheets), with secondary veins distally inconspicuous; the calyx is glabrous but with peltate microtrichomes outside; and the fruits are oblong, 5-angled, and apiculate, with valves coriaceous, but not woody. Additionally, on herbarium sheets the adaxial surface of the leaflets usually presents a clearer color near the midrib, the abaxial surface is whitish, and the petiole and the midrib are sometimes furrowed. Another feature of this species is the resin released during the drying process, which is evident on the papers used to press the material.

Pseudobombax calcicola seems to be related to *P. grandiflorum* (Cav.) A. Robyns and *P. parvifolium* Carv.-Sobr. & L. P. Queiroz by the leaves with five elliptic leaflets, the similar length of the petals, and the absence of phalanges in the androecium. However, it differs from the former by the absence of intersecondary veins, the larger calyx (11–18 × 20–22 mm vs. 8–14 × 12–20 mm, respectively), the 5-angled fruits (vs. 5-winged), and the pyriform seeds (vs. subreniform). From the latter, it differs by its coriaceous leaflets (vs. chartaceous), larger calyx (11–18 × 20–22 mm vs. 10–11 × 12–19 mm), fewer stamens (ca. 300 vs. ca. 450), and pyriform seeds (vs. reniform). It is further distinguished from these two species by the leaflets with acute to rounded, retuse apices (vs. mucronate in *P. grandiflorum* and acuminate in *P. parvifolium*), the larger ovary (11–14 mm long vs. 5–6 mm in *P. grandiflorum* and ca.

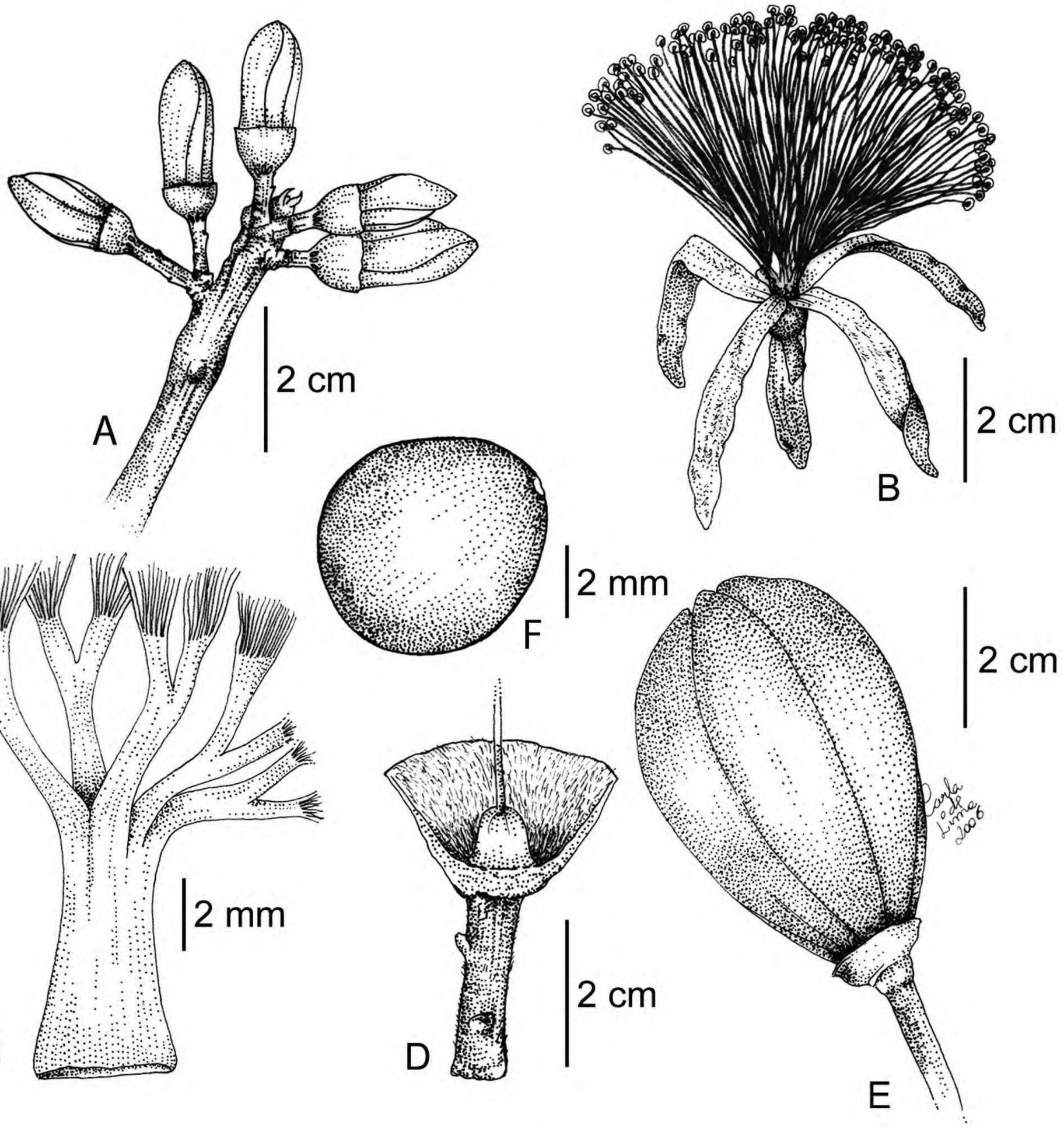

Figure 2. *Pseudobombax minimum* Carv.-Sobr. & L. P. Queiroz. —A. Inflorescence. —B. Flower. —C. Androecium. —D. Ovary. —E. Fruit. —F. Seed. A drawn from *Pereira & Alvarenga 3114* (RB); B–F drawn from the holotype, *R. C. Forzza, M. Magenta, J. V. Coffani-Nunes & C. Kameyama 1591* (SPF).

8 mm in *P. parvifolium*), and the narrower fruits (13–15 mm wide vs. 22–30 mm in *P. grandiflorum* and 28–50 mm in *P. parvifolium*).

Paratypes. BRAZIL. **Bahia:** Bom Jesus da Lapa, Faz. Serra Solta, 17 July 1975 (lf., fl.), *D. Andrade-Lima 75-8152* (IPA 46217, IPA 46217-A); São Félix do Coribe, 13°47′23″S, 43°57′31″W, 10 Apr. 2005 (lf.), *J. G. de Carvalho-Sobrinho, E. B. Miranda, R. M. Castro & S. F. Conceição 485* (CEPEC, HUEFS, K, SP).

2. Pseudobombax minimum Carv.-Sobr. & L. P. Queiroz, sp. nov. TYPE: Brazil. Goiás: Nova Roma, estrada Nova Roma–Teresina de Goiás, vilarejo Aboboreira, 13°33′S, 47°04′W, 31 July 2000 (fl., fr.), *R. C. Forzza, M. Magenta, J. V. Coffani-Nunes & C. Kameyama 1591* (holotype, SPF; isotypes, HUEFS, SP). Figure 2.

Haec species calyce externe sicut tubo staminali glabro et staminibus sat paucis (180 ad 250) *Pseudobombaci campestri* (Mart. & Zucc.) A. Robyns affinis, sed ab eo calyce 3–5 mm (vs. 9–11 mm) longo, petalis 50–55 mm (vs. 11–13 mm) longis et fructu 3.5–5.5 cm (vs. 6–8.5 cm) longo differt.

Tree ca. 4 m; trunk striped with alternating bands of grayish bark and greenish underbark; branches glabrous, not resinous, without wax; brachyblasts absent; stipules not seen. Leaves not seen. Inflorescences solitary or in biflorous cymes, terminal to subterminal, peduncles, when present, to 10 mm; flower buds ovate, oblong, to obovate, to 50 × 10–13 mm; pedicel 9–12(–20 when in fruit) × 2–3 mm, glabrous; bracteoles 3, alternating along the pedicel, ca. 2 × 2.5 mm. Flowers ca. 6 cm; receptacle 2–3 mm, with 1 whorl of 6 to 12 glands, glabrous except for peltate microtrichomes; calyx 3–5 × 8–12 mm,

campanulate, truncate, slightly apiculate, outer surface glabrous except occasionally with sparse, peltate microtrichomes, inner surface glabrous on the basal third, sericeous on the remainder; petals 50–55 × 7–10 mm, linear to lanceolate, outwardly brownish green, covered with tufted, rigid hairs, inwardly covered by a strip of slender, branched hairs and a strip of simple hairs; stamens 180 to 250, staminal tube 5–10 × 2–4 mm, 1.5–5× longer than wide, glabrous, continuing in 5 phalanges, each 3–5 mm, forked as 10, filaments free for 35–45 mm, anthers 2–3 mm; ovary ca. 4 × 2 mm, ovate to oblong, glabrous, peltate microtrichomes occasionally present, style 50–70 mm, glabrous. Capsule 3.5–5.5 × 2–3 cm, oblong to slightly obovate, valves woody, glabrous; kapok copious, golden; seeds ca. 5 mm diam., subglobose, glabrous, evenly blackish colored; hilum raised.

Distribution, habitat, and ecology. *Pseudobombax minimum* has a narrow geographic range, between 11°S and 16°S latitude and 44°W and 47°W longitude. It occurs only at the eastern border of the central Brazilian plateau, ranging from western Bahia to eastern Goiás, at elevations of about 600 m. It is known in cerrado and seasonally dry forests (Carvalho-Sobrinho, pers. obs.). Some populations seem to be endangered by the expansion of soybean plantations and growing urbanization in Bahia.

IUCN Red List category. *Pseudobombax minimum* should be considered Vulnerable (VU A4c) according to IUCN Red List criteria (IUCN, 2001).

Phenology. The new species was collected in flower from June to August and in fruit in September.

Etymology. Due to its extremely reduced flowers and fruits, the smallest recorded for the genus to the present, this new species was named from the Latin for minimum, contrasting with *Pseudobombax maximum* A. Robyns, which presents flowers 15–24 cm long, the longest found in the genus.

Discussion. Within its range, *Pseudobombax minimum* is promptly recognized by its reduced flowers (to 6 cm) and fruits (to 5.5 cm). *Pseudobombax minimum* is not clearly related to any species of *Pseudobombax* from central and eastern Brazil. It is similar to *P. campestre* (Mart. & Zucc.) A. Robyns in its androecium with relatively few stamens (180 to 250) and the glabrous receptacle, calyx, and staminal tube; however, *P. minimum* differs from *P. campestre* by its smaller calyx (3–5 mm vs. 9–11 mm long, respectively), smaller flowers (to 6 cm vs. 10–12 cm long), and smaller fruits (to 5.5 cm vs. 6–8.5 cm long). Furthermore, *P. campestre* is known only from campo rupestre vegetation in the Serra do Espinhaço in Bahia and Minas Gerais states, at altitudes between 1150 and 1500 m.

Paratypes. BRAZIL. **Bahia:** Riachão das Neves, estr. Riachão das Neves–Barreiras, 11°46′S, 44°54′W, 3 June 1999 (fl.), *E. Melo, F. França & B. M. Silva 2763* (HUEFS); estr. Brasília–Fortaleza, entre o Rio Corrente e Santa Maria, 4 July 1964 (fl.), *J. M. Pires 58152* (NY). **Goiás:** Flores de Goiás, beira da estrada, 3 June 1984 (fl.), *A. Negrett s.n.* (IBGE, R); Natividade, 23 July 1955 (fl.), *A. Macêdo s.n.* (Herb. A. Macêdo, RB); Teresina de Goiás, prox. ao entroncamento da estr. Teresina de Goiás–Campos Belos com estr. para Nova Roma, 13°30′S, 47°30′W, 3 July 1996 (fl.), *B. A. S. Pereira & D. Alvarenga 3114* (IBGE, R, RB); Rio Praim (Rio Paraná basin), 16°40′S, 47°W, 16 Aug. 1982 (fl.), *J. A. Ratter 4736* (UEC).

3. Pseudobombax parvifolium Carv.-Sobr. & L. P. Queiroz, sp. nov. TYPE: Brazil. Bahia: Tucano, ca. 25 km NW do povoado de Bizamum, 10°53′29″S, 38°58′40″W, 12 Nov. 2005 (fl., fr.), *J. G. de Carvalho-Sobrinho, D. Cardoso, Sr. João, P. Oinonen & M. Jonsson 751* (holotype, HUEFS; isotypes, K, NY). Figure 3.

Haec species calyce petalisque sat parvis, androecio sine phalangibus et fructu externe glabro *Pseudobombaci grandifloro* (Cav.) A. Robyns affinis, sed ab eo foliolo pagina abaxiali indumento praedita (vs. glabra), tubo staminali pubescenti (vs. glabro) et ovario ca. 8 mm (vs. 5–6 mm) longo differt.

Tree 5–8 m; trunk striped with alternating bands of grayish bark and greenish underbark; branches glabrescent, not resinous, covered or not with whitish wax when young; brachyblasts absent; stipules not seen. Leaves palmately compound, clustered at apex of the branches; petiole 20–110 mm, thin, flattened, furrowed on the upper side, puberulent to glabrescent, with sparse branched trichomes, with small glands along its length, base slightly thickened, usually glaucous, apex slightly widened, ca. 2–3 mm diam.; petiolule absent; leaflets (3 to)5 to 7, chartaceous, usually plane, sometimes concave, appearing conduplicate, 20–78 × 8–32 mm, 2.4–4.3× longer than wide, subelliptic, elliptic, oblanceolate, narrowly oblanceolate, or ovate-lanceolate, apex acute to acuminate, base cuneate to slightly attenuate, margin revolute, entire, rarely inconspicuous and irregularly crenulate, both surfaces glabrescent, with sparse peltate microtrichomes, abaxial surface with branched trichomes over the veins, midrib vein prominent abaxially, secondary veins in 9 to 12 pairs, impressed on both surfaces, intersecondary veins absent, tertiary veins simple, branched or retroflexed. Inflorescences terminal, solitary, buds oblong to lanceolate; pedicel 6–24 × 2–7 mm, 2–6.6× longer than wide, erect to incurved, puberulent or not; bracteoles 3 to 5, along the pedicel. Flowers ca. 10 cm; receptacle 2–3 mm,

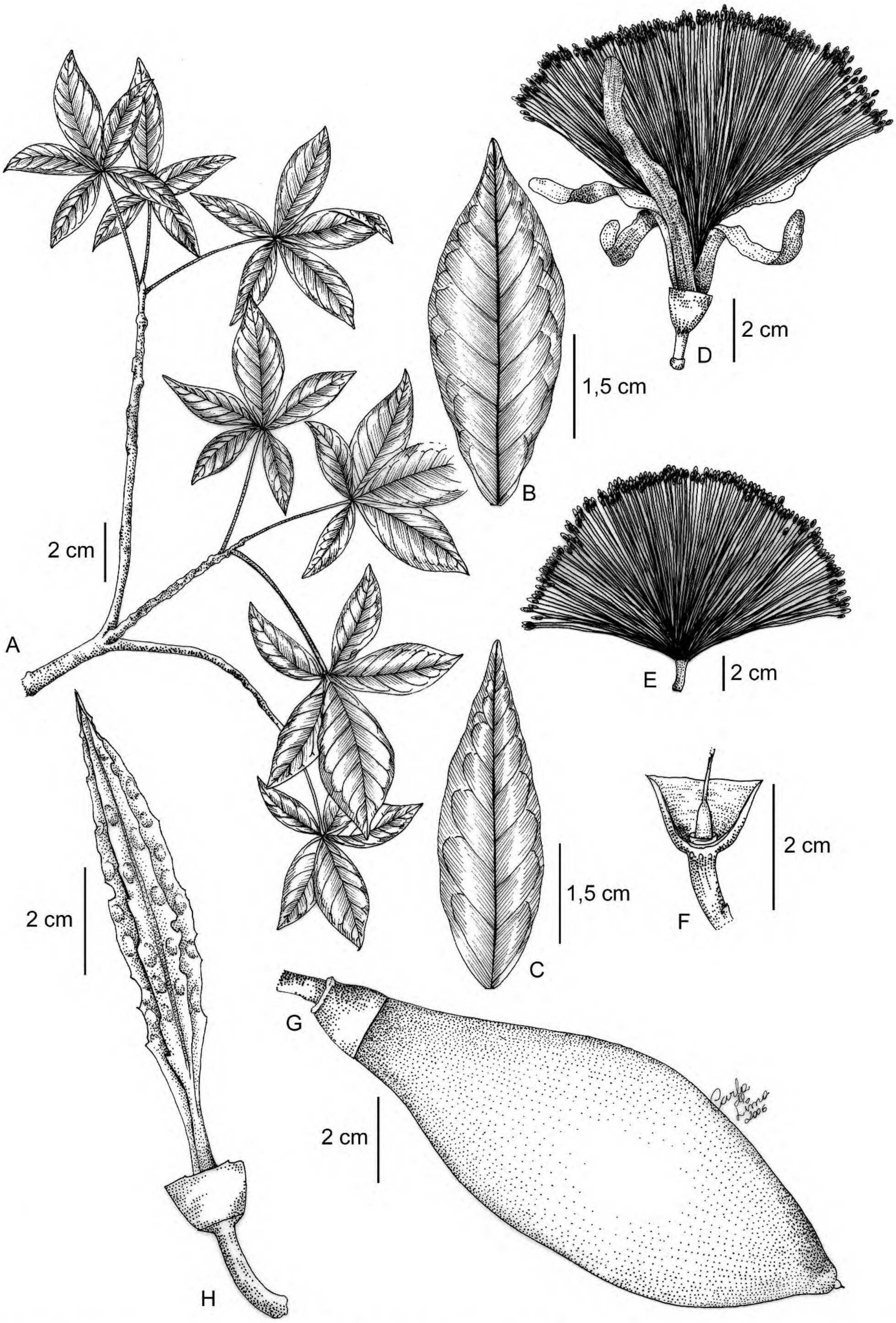

Figure 3. *Pseudobombax parvifolium* Carv.-Sobr. & L. P. Queiroz. —A. Leaves. —B. Ovate leaflet. —C. Obovate leaflet. —D. Flower. —E. Androecium. —F. Ovary. —G. Fruit. —H. Replum. A–C drawn from *J. G. de Carvalho-Sobrinho et al. 250* (HUEFS); D–F drawn from the holotype, *J. G. de Carvalho-Sobrinho, D. Cardoso, Sr. João, P. Oinonen & M. Jonsson 751* (HUEFS); G drawn from *J. G. de Carvalho-Sobrinho et al. 752* (HUEFS); H drawn from *J. G. de Carvalho-Sobrinho et al. 246* (HUEFS).

with 1 whorl of ca. 10 glands; calyx 10–11 × 12–19 mm, cupular to campanulate, truncate, sometimes inconspicuously 5-apiculate, outwardly puberulent, with short, branched trichomes, sometimes with peltate microtrichomes, sericeous on the upper half internally; petals 98–130 × 6–15 mm, linear to lanceolate, apex acute, brown to cream externally, usually with longitudinal stripes when dry, tomentose almost to base, pubescent internally, covered with tufted, rigid hairs, inwardly covered by a strip of slender, branched hairs and a strip of simple hairs; stamens ca. 450, staminal tube 7–15 × 3–8 mm, 1.5–5× longer than wide, pubescent, phalanges absent, filaments free for 80–110 mm, anthers 1–3 mm; ovary ca. 8 × 3–6 mm, ovate, slightly 5-angled, subglabrous except for peltate microtrichomes; style ca. 135 mm, subglabrous except for peltate microtrichomes mainly on basal portion. Capsule 9.5–13.5 × 2.8–5 cm, oblong to oblong-elliptic, slightly 5-angled, apiculate to 10 mm, base cuneiform, ca. 15 mm wide, valves woody, glabrous; kapok clear brown; seeds ca. 5 × 2–3 mm, reniform, dark brown, slightly striped; hilum not prominent, slightly darker.

Distribution, habitat, and ecology. *Pseudobombax parvifolium* is endemic to caatinga vegetation in northeastern Brazil, in the states of Bahia and Sergipe (Canindé do São Francisco municipality).

IUCN Red List category. *Pseudobombax parvifolium* should be considered Near Threatened (NT) according to IUCN Red List criteria (IUCN, 2001).

Phenology. The new species was collected in flower from August to January and in fruit from November to February.

Etymology. The specific epithet derives from the Latin "parvus" (meaning "small") and "folium" (meaning "leaf"), in reference to the diminutive size of the leaflets in this species.

Discussion. *Pseudobombax parvifolium* is characterized by leaves with five to seven glabrescent leaflets (rarely three), as well as the apex of the petiole that is slightly swollen (2–3 mm diam.); the calyx has branched, short and rigid trichomes on the outer surface; the androecium lacks phalanges and the staminal tube is pubescent; the ovary is glabrate (except for the peltate microtrichomes); and the seeds are reniform.

The five, elliptic to oblanceolate, glabrate leaflets, the flowers without phalanges, and the relatively small size of the calyx and petals are all characters that relate *Pseudobombax parvifolium* to *P. grandiflorum*. The new species, however, differs by the absence of intersecondary veins, the presence of branched trichomes on the outer surface of the calyx (vs. the calyx glabrous) and on the abaxial surface of the leaflets (vs. leaflets glabrate), the petals pubescent on their entire inner surface (vs. glabrous in lower third), the pubescent staminal tube (vs. glabrous), the slightly 5-angled fruits (vs. 5-winged), and reniform and striped seeds (vs. subreniform and spotted). Further, *P. parvifolium* is known only from caatinga vegetation (Carvalho-Sobrinho, pers. obs.), while *P. grandiflorum* occurs mainly in coastal restinga vegetation and tropical rainforest and in semi-deciduous forests up to 150 km from the sea (Carvalho-Sobrinho, pers. obs.).

Among the *Pseudobombax* species found in caatinga vegetation, *P. parvifolium* is most similar to *P. calcicola*; in both species the leaves have five sessile to subsessile leaflets and the androecium lacks phalanges. It differs from *P. calcicola* by the branches that are not corky or resinous, the acuminate leaflets (vs. retuse), the presence of short, branched trichomes on the abaxial leaflet surface (vs. leaflets glabrous), the outer surface of the calyx covered by branched hairs mixed with peltate microtrichomes (vs. only with peltate microtrichomes), wider fruits (28–50 mm vs. 13–15 mm wide), and reniform seeds (vs. pyriform).

Paratypes. BRAZIL. **Bahia:** Angüera, ca. 22 km W de Feira de Santana, estrada do Feijão, entrada da Faz. Campo Alegre, 12°11′30″S, 39°9′26″W, 16 Jan. 2006 (lf., fl.), *L. P. Queiroz & D. Cardoso 12000* (HUEFS); Caturama, Morro Branco, 13°17′45″S, 42°12′1″W, 6 July 2007 (fl., fr.), *A. A. Conceição, M. A. Colaço, G. Costa, D. Cardoso & F. B. L. Silva 2424* (HUEFS); Itiúba, 10°38′59″S, 39°52′33″W, 17 Aug. 2002 (fl.), *L. P. Queiroz, C. Correia, J. Costa & J. G. Nascimento 7343* (HUEFS, SPF); 10°38′59″S, 39°59′33″W, 19 Apr. 2004 (lf., fr.), *T. S. Nunes, J. G. Carvalho-Sobrinho, J. G. Nascimento & C. Machado 1131* (HUEFS); 10°38′26″S, 39°52′50″W, 19 Apr. 2004 (lf., fr.), *J. G. de Carvalho-Sobrinho, T. S. Nunes & J. G. Nascimento 246* (HUEFS), 19 Apr. 2004 (lf.), *J. G. de Carvalho-Sobrinho, T. S. Nunes & J. G. Nascimento 248* (HUEFS); Jeremoabo, Serra Branca (Raso da Catarina), Faz. Raposa, 10°15′S, 38°21′W, 26 June 2004 (lf.), *J. G. de Carvalho-Sobrinho, A. C. Assunção & Sr. Moacir 250* (HUEFS); 5 km N na estrada para Faz. Natur. (Brejinho), 10°3′0″S, 38°21′27″W, 12 Aug. 2005 (lf.), *J. G. de Carvalho-Sobrinho, E. B. Miranda, A. Rapini, A. C. R. Cruz & A. S. Farias 572* (HUEFS); Quijingue, ca. 31.5 km NW de Tucano, Faz. Juazeiro Novo, 10°55′51″S, 39°3′49″W, 12 Nov. 2005 (fl., fr.), *J. G. de Carvalho-Sobrinho, D. Cardoso, Sr. João, P. Oinonen & M. Jonsson 752* (HUEFS); Tanquinho, 24 Nov. 1991 (fl.), *I. Crepaldi & M. V. Oliveira 06* (HUEFS); Tucano, subida para a Serra das Candeias, 10°55′59″S, 39°4′40″W, 13 Nov. 2005 (fl.), *J. G. de Carvalho-Sobrinho, D. Cardoso, Sr. João, P. Oinonen & M. Jonsson 753* (HUEFS); povoado Bizamum, Serra Grande, 10°51′18″S, 38°2′14″W, 21 Apr. 2005 (lf.), *D. Cardoso, W. J. Lima, A. L. Santana & J. G. N. Andrade 502* (HUEFS). **Sergipe:** Canindé de São Francisco, Curutuba, beira da estrada, 18 Oct. 1999 (lf., fl.), *R. A. Silva 1163* (HRB); Faz. Brejo, 26 Sep. 2000 (lf., fl.), *L. M. Cordeiro, P. R. M. Belchior & A. G. Magalhães 190* (HRB).

Acknowledgments. We thank the curators of the herbaria HUEFS, IBGE, NY, R, RB, and SPF, who

kindly sent material on loan; Carla de Lima for the illustrations; J. L. Fernández-Alonso for critical reading of the manuscript; and Victoria C. Hollowell for the careful review and language improvements. This work was supported by a grant from the Fundação de Amparo à Pesquisa do Estado da Bahia (APR199/2005), a fellowship from the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior to the first author, and a fellowship from the Conselho Nacional de Desenvolvimento Científico e Tecnológico (470221/2001-1) for the second author. Field trips were supported by the Brazilian Program of Research on Biodiversity (PPBio/Semi-árido).

Literature Cited

Alverson, W. S., B. A. Whitlock, R. Nyffeler, C. Bayer & D. A. Baum. 1999. Phylogeny of the core Malvales: Evidence from *ndh*F sequence data. Amer. J. Bot. 86: 1474–1486.

Andrade-Lima, D. 1977. A flora de áreas erodidas de calcário bambuí em Bom Jesus da Lapa, Bahia. Revista Brasil. Biol. 37: 179–194.

Baum, D. A., W. S. Alverson & R. Nyffeler. 1998. A durian by any other name: Taxonomy and nomenclature of the core Malvales. Harvard Pap. Bot. 3: 315–330.

———, S. D. Smith, A. Yen, W. Alverson, R. Nyffeler, B. A. Whitlock & R. L. Oldham. 2004. Phylogenetic relationships of Malvatheca (Bombacoideae and Malvoideae; Malvaceae sensu lato) as inferred from plastid DNA sequences. Amer. J. Bot. 91: 1863–1871.

Bayer, C., M. Fay, A. de Bruijn, V. Savolainen, C. Morton, K. Kubitzki, W. Alverson & M. Chase. 1999. Support for an expanded family concept of Malvaceae within a recircumscribed order Malvales: A combined analysis of plastid *atp*B and *rbc*L DNA sequences. Bot. J. Linn. Soc. 129: 267–303.

Fernández-Alonso, J. L. 1999. Sobre la identidad de *Pseudobombax squamigerum* y *Eriotheca gentryi* (Bombacaceae). Anales Jard. Bot. Madrid 57: 162–164.

———. 2001. Bombacaceae neotropicae novae vel minus cognitae 5. Novedades en *Pseudobombax* Dugand y sinopsis de las especies Colombianas. Revista Acad. Colomb. Ci. Exact. 25: 467–476.

IUCN. 2001. IUCN Red List Categories and Criteria, Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland, and Cambridge, United Kingdom.

IPNI. 2008. The International Plant Names Index database. <http://www.ipni.org>, accessed 12 July 2008.

Judd, W. S. & S. R. Manchester. 1997. Circumscription of Malvaceae (Malvales) as determined by a preliminary cladistic analysis of morphological, anatomical, palynological and chemical characters. Brittonia 49: 384–405.

Robyns, A. 1963. Essai de Monographie du genre *Bombax* L. s.l. (Bombacaceae). Bull. Jard. Bot. État Bruxelles 33: 1–315.

———. 1967. Botany of the Guayana Highland. Mem. New York Bot. Gard. 17: 195–197.

Secretaria do Meio Ambiente e Recursos Hídricos do Estado da Bahia, Centro de Recursos Ambientais & Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis. 2006. Unidades de Conservação no Estado da Bahia. <http://www.seia.ba.gov.br/uc/imagens/mapas/todas_ucs_bahia.pdf>, accessed 12 July 2008.